# 2011-12 Gates: Pre-College Math Grant NSCC_APP8025

## Status: Submitted

## Applicant Information

**Organization:** North Seattle Community College
**Consortium:** No

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# Contents

## Section 1

### Project Participation

**1A. Provide an updated list of the college faculty/staff who are *core team members* involved in leading and/or implementing the project.**

- Edgar Jasso
- Deanna Li
- Pete Lortz
- Ben Aschenbrenner
- Denise Brannan
- Betsy Campbell
- Michael Gaul
- Barbara Goldner
- Ralph Jenne
- Pam Lippert
- Jenny Mao
- Eileen Murphy
- Harry Watts

**1B. Estimate the approximate percentage of math department members (full-time and part-time/adjunct *separately*) who have participated in some kind of project-related activity (campus events, use of CATs, classroom exchanges, etc.).**

In computing the percentage of fulltime participation, I did not include one of our fulltime math faculty into the calculation. That particular faculty was hired to teach primarily college-level math. However, Full-time faculty who teach all or part of their load in pre-college math courses were considered in the percentage calculation below. This includes two faculty who teach part of their load in other academic divisions.

| Project-Related Activity | Fulltime Participation | Part-time Participation |
|---|---|---|
| Reflection Friday | 90% | 22% |
| Use of CATs | 70% | 11% |
| Classroom Exchanges | 60% | 11% |
| Common Core Final Exam | 40% | 22% |
| Common Pretest | 90% | 67% |

## Section 2

**Progress Report on Project Activities and Challenges**

**2A. One of our core project themes is to make learning and teaching "visible" through incorporating the common practices of 1) *classroom observations/exchanges* and 2) *classroom assessments* into 3) *faculty inquiry* efforts at each of the project colleges. Describe to what extent and in what ways you have incorporated these three areas of practice into your project over the past year, including who in the department has been involved with each area.**

1.Classroom exchanges are being done every quarter but not at the rate we had hoped for. Faculty who have been able to participate in faculty exchanges have found the practice extremely valuable. They are being exposed to alternative ways to approach lessons and concepts for their class, and are reporting in the "Reflection Fridays," that they have made adjustments to their own approaches because of the exchanges. The beauty of the exchange process is that faculty discuss before, during and after the observation, and can really delve into the depths of why they teach they way they do.
Unfortunately, classroom exchanges are taking place at a lesser rate than originally planned. The majority of exchanges that happened this past year were completed in the Fall Quarter. In an effort to facilitate the exchanges and increase the number occurring, a faculty load grid was created by Barbara Goldner showing when faculty are in and out of the classroom. Unfortunately, most faculty teaching times overlap which prevents some exchanges from occurring. Strategies for getting more exchanges completed next year are being explored.

2.The majority of math faculty involved in the grant have incorporated classroom assessments as part of their effort to help students find success in math, deepen students' math understanding and complete their precollege math in a timely fashion. The retreat at Cedarbrook and ongoing conversations with colleagues during our "Reflection Friday" have raised our understanding of what classroom assessment is, why it is important and how to do classroom assessment without taking up a lot of class time. Ben Aschenbrenner is in charge and is a very passionate advocate of classroom assessment. The college has also put assessment at the forefront of all instruction which integrates nicely with the work of the grant activities. There are ongoing workshops, small group discussion, etc. on assessment through our Teaching and Learning Center. Interestingly, the grant project has become a model for how faculty can explore and implement promising practices into their classroom around assessment activities. Math faculty in the grant are being asked to share what they are learning with non-Math faculty broadening the reach of the grant activities.
3.Our "Reflection Friday" was meant to be faculty inquiry time but has evolved into a combination of exchange of ideas, problem solving, math discussion etc. It is very well attended, has boosted camaraderie and has become one of the highlights of the grant. It is

headed by Michael Gaul. Unfortunately, as successful as it is, “Reflection Friday” is not faculty inquiry. At the beginning of spring, we realized we needed to form small faculty inquiry groups, which we have called figlets. Three inquiry groups were identified. One was going to tackle issues on student skill in basic math, another was going to focus on group work in the classroom and the third was going to tackle throughlines in precollege math. Faculty have already expressed interest as to which figlet they want to belong. Unfortunately, because of all the various commitments and time constraints that spring quarter brings, figlets never took off. The plan is to roll these groups out in the Fall, and again to incorporate their work into the broader context of the college assessment and strategic plans as well as focus in on the specific issues of pre-college math.

**2B. Describe other specific project-related activities you and your team have done since last summer; by the end of year 2 of the grant (August 31, 2011), what will your team have accomplished toward the overall stated goals of your project?**

Our goal is to increase the number of students who successfully complete their precollege math, raise the number of students transitioning into college-level math and add more students into science, math or engineering fields. Serendipitously, these are also the goals of several other focused college initiatives. To accomplish this, our project addressed three major educational practices:

1.What is taught: We successfully offered a yearlong series of hardlink classes. In Fall 2010, Beginning Algebra I (MATH 084) was hardlinked with a math study skills class taught by one of our counselors. In the winter quarter, Beginning Algebra II (MATH 085) was hardlinked with a supplemental math instruction. In spring, we taught Intermediate Algebra (MATH 098) with Environmental Science (ENV 150). The supplemental instruction had students working in groups, tackling more in-depth math activities from skill-oriented ones to contextually-based to those that require in-depth explanation and writing. Students were required to keep a journal of their math experiences. From the in-class assessment, students seem to enjoy and benefit from this link. In the math/env link, both instructors made sure that each math topic had some environmental application, each test had some integrative question, group project had both disciplines in them, etc. The class is extremely problem-solving oriented with heavy applications in environmental math. The attendance was good and the drop rate quite low. From the common core final analysis, it seems that there is some deeper math understanding occurring in the linked class. Because of the positive feedback, we are adding more linked classes this coming academic year. In fall quarter, we are linking Basic Math with Study Skills, MATH 084 with supplemental instruction and MATH 098 with ENV 150. We will also be analyzing the effectiveness of these approaches by examining data on student retention and success relative to traditional offerings of the same courses.

2.How we teach: More than half the math faculty have shifted away from the “traditional” lecture mode of teaching. Group work is extensively incorporated and students are strongly

encouraged to form study groups. With the help of courses from Harvard and the Cedarbrook sessions, faculty have been quite creative at developing innovative group work activities. Some that were shared during our "Reflection Friday" were very delightful and easily doable with little planning on faculty's part. The activities hone algebra skills in a fun and engaging way. We have added more contextually-based activities into our courses in order to deepen students' math understanding. We have made great effort to show where algebra can be applied to the point where it has changed some students' attitude towards math.

3.How we assess: Innovative classroom assessments are becoming part of daily routine. A number of faculty have come up with creative ways to assess student learning. Using their assessment results, faculty have adjusted their teaching styles, brainstormed how to get better student understanding rather than jamming down more material at breakneck speed. There is a more deliberate awareness of student needs. Many experiences and assessment methods have been shared through our biweekly "Reflection Friday" events and have invigorated a number of faculty to try and incorporate more assessment into their teaching. The implementation of the common core finals on each of our precollege classes will also have an impact on how the math faculty, as a department, assess student learning. Having wide conversation of what is to be on the core final is of great value.

The 2-quarter data collected by our IR indicates some improvement in overall completion rate. The small steps have taken such as linking more precollege classes, doing more assessment and group activities, getting together biweekly, etc. are slowly manifesting that we are headed in the right direction.

**2C. What have been the key challenges/obstacles you have encountered so far in organizing your team and the work of your project, and how are you addressing them? In particular, what challenges and issues have you encountered in considering and implementing the core practices in the context of the goals of your local project work?**

The math study skills course, that was offered in fall 2010 as a hardlink to the beginning algebra course (MATH 084), generated quite a few unhappy students who did not feel they needed the class. We have since shifted the study skills link to Basic Math (MATH 081). Fall Quarter 2011 will be the third time this link has been offered. From data gathered so far and from faculty input, it seems that this hardlink is quite successful. It is definitely more useful to the basic math students since one big barrier to their success in college is time management and knowing how to navigate the system. Both of these are addressed and emphasized in the study skills class.

We are still battling a minority of skeptical faculty who oppose any changes to the traditional lecture-mode of teaching. In addition, they still teach a mile-wide but an inch-deep. It is

difficult for them to teach differently and try methods that have been proven effective for student learning because they feel it takes away precious lecture time in class. It is also hard for the precollege student to have instructors that are at either ends of the spectrum. The math faculty has yet to come to an agreement on what we are comfortable doing as a whole and start implementing those core practices across the board. We have not come to a consensus at this point and are still looking on how to build one.

**2D. What else can the RPM project leadership do to help you address these challenges?**

The RPM project leadership has been extremely supportive and flexible. When we saw that our coordinated studies class (Intermediate Algebra and Environmental Science) was not sustainable in light of the budget woes, and that the high integrated studies class enrollment is not achievable, the team was supportive of our decision to change it to a hardlink class and reallocate funds to compensate for the extra class picked up by the instructors involved.

From student and faculty feedback, the hardlink class seems to be well liked. To that end, we are shifting our grant focus into developing and offering more classes linked with the sciences. The RPM leadership can help us with the transition by supporting our move and being open to changes in the grant.

Additionally, we look to the RPM project leadership to continue to provide us with examples of promising practices in pedagogies and assessment and pull us together in meaningful retreat opportunities.

## Section 3

**Data and Evidence**

**3A. With respect to student achievement or perspectives, what evidence have you gathered or compiled so far? How have you used (or how do you plan to use) that evidence to inform the work of your project?**

In terms of student perspectives, some of us have used mid-quarter and end of the quarter assessment forms that we have developed. They have given us a clearer picture of how much effort students are putting into their math studies and how they think they are doing as correlated to their test scores.

In terms of achievement, last spring, we initiated a common core final exam in all of our precollege math classes. Unfortunately, not many incorporated it into their final exam. However, with the few classes that did, we did a topic by topic analysis of percentage correct. With that data, we will start emphasizing areas of difficulty this coming fall.

All yearlong, we have given pretests in our developmental and precalculus classes. The pretest was meant to make sure students have the necessary prerequisites and at the same time, survey how much math is retained. The pretest also analyzed how students got in (i.e., via placement exam, prerequisite class, advisor signature, etc.), where they are coming from (i.e., our own college, another college, etc.), what mode of teaching was the prerequisite class (i.e., on-campus, online, on-campus web-based, day, evening, etc.) We were hoping to see a trend but unfortunately, our scoring system did not allow that. The results were very disheartening. We have since made a rubric and changed the scoring to reflect partial math understanding and allow for some human error. We tried this rubric on our spring common core final exam. This time, the final results are more indicative of our students' understanding of math. There is some more fine tuning that needs to be done such as rewriting some test questions for more clarity, but overall, the results are more telling. We will begin using the same rubric for our pretest in the fall.

**3B. With respect to faculty perspectives and behaviors related to project goals, what evidence have you gathered or compiled to date? How have you used (or how do you plan to use) that evidence to inform the work of your project?**

At the recent spring math conference, a group of faculty did a panel discussion to inform others of the changes occurring at North due to the grant. Four primary topics were addressed: classroom exchanges, classroom assessment, Reflection Friday and our learning resource bank. A videotape of one of our "Reflection Friday" events was also made. The discussion was very lively and the panel was pretty successful at getting some schools into thinking about ways to enhance their precollege math and encourage more faculty collaboration.

Our biweekly Reflection Friday attendance and the shear number of faculty who go to Cedarbrook and Sleeping Lady retreats attest to the eagerness of North's faculty to learn new and innovative classroom techniques for more student success. This grant has made the math department very cohesive. It has energized the math faculty as never seen before. Reflection Friday has become a model for how faculty can explore promising practices and new pedagogies into their classroom.

**3C. What additional support do you need from the RPM leadership and evaluation team to help you gather and/or use evidence to assess your project-related work?**

The pretest and common core final exam were requested by the math faculty. There is an overwhelming number of faculty who did the pretest but not the common core final exam. We have not had time to ask why this is so but we are very puzzled with the huge difference in level of participation. We welcome any ideas the RPM leadership can give to get more faculty to collaborate in this effort.

To be able to give a pretest and common core final takes a lot of effort and time:
•A large group is convened and then separated into small subgroups to write tests.
•Grading of pretests has generally been done by individual instructors but we plan to do group grading starting fall. This is similar to how we did the common core final exam this summer. Group grading makes the test more evenly scored.
•Test analysis is done by one of our faculty. It is extremely detailed.

As can be seen, writing, grading and analyzing tests take a tremendous manpower and time. Right now, the grant funds these tasks. However, it is not sustainable. When the grant is over, we are not sure how we can continue this valuable work. Any ideas on how we can Finalsustain this is very much appreciated. In addition, we are very happy to share the results and rubric used with the RPM leadership in hopes that we can get some feedback.

## Section 4

**Budget Narrative**

**4A. Description of how funds will be used for Project Development Salaries, Wages, and Benefits.**

| | | | |
|---|---|---|---|
| **Project Development Salary and Wages** | $39,125.00 | **Project Development Employee Benefits** | $9,890.00 |

Mini-retreat faculty stipend (15 faculty x 3 hours x $25/hour x 3 retreats/year)3,375
curriculum retreat stipend benefits (16%)540
Stipend/Curriculum Work on Math and Science Hardlink (2 Hardlinks to be developed, 4 faculty)12,000
Benefits (16%)1,920
RB Leadership/Grant Activities Coordinator - Faculty Lead (1/3 release time) ($5500*3qtrs) 16,500
benefits (38%)6,270
Assessment Database Management Stipend ($500/quarter)1,500
benefits (16%)240
Summer stipend for lead faculty to compile final report2,000
benefits (16%)320
Misc supplies and materials/copying, paper etc.
PT faculty stipends to participate in reflection Fridays and other project events ($25/hr x 10 faculty x 5 hr/qtr)3,750
benefits on above (16%)600
Reflection Friday Food ($30/event x 5/quarter x 3 quarters)
Travel to Nat'l, regional, local conferences for faculty
Honoraria for outside expert to come to NSCC

**4B. Description of how funds will be used for Project Development Goods and Services.**

| | |
|---|---|
| **Project Development Goods and Services** | $2,075.00 |

curriculum retreat food ($25pp x 15 faculty x 3/year) $1,125
Misc supplies and materials/copying, paper etc. $ 500
Reflection Friday Food ($30/event x 5/quarter x 3 quarters) $450

**4C. Description of how funds will be used for Project Development Building Rental and Utilizations.**

| | |
|---|---|
| **Project Development Building Rental & Utilizations** | $0.00 |

**4D. Description of how funds will be used for Project Development Travel.**

| | |
|---|---|
| **Project Development Travel** | $1,500.00 |

Travel to Nat'l, regional, local conferences for faculty

**4E. Description of how funds will be used for Project Development Contracts.**

| | |
|---|---|
| **Project Development Contracts** | $500.00 |

Honoraria for outside expert to come to NSCC

**4F. Description of how funds will be used for Instruction Salaries, Wages, and Benefits.**

| | | | |
|---|---|---|---|
| **Instruction Salary and Wages** | $6,000.00 | **Instruction Employee Benefits** | $960.00 |

Supplemental math Instruction ($2000/quarter x 3/year)
benefits on the above (16%)

**4G. Description of how funds will be used for Instruction Goods and Services.**

| | |
|---|---|
| **Instruction Goods and Services** | $0.00 |

**4H. Description of how funds will be used for Instruction Building Rental and Utilizations.**

| | |
|---|---|
| **Instruction Building Rental & Utilizations** | $0.00 |

**4I. Description of how funds will be used for Instruction Travel.**

| | |
|---|---|
| **Instruction Travel** | $0.00 |

**4J. Description of how funds will be used for Instruction Contracts.**

| | |
|---|---|
| **Instruction Contracts** | $0.00 |

**4K. Description of how funds will be used for Administration Salaries, Wages, and Benefits.**

| | | | |
|---|---|---|---|
| **Administration Salary and Wages** | $4,200.00 | **Administration Employee Benefits** | $1,596.00 |

Dean's office time for oversight of project participants and activities management ($40/hr x 50 hrs) and entering monthly OBIS $2,400

Grants office time for oversight of project budget and reporting requirements (60 hrs x $30/hr) $1,800

Benefits on above (38%) $1,596

**4L. Description of how funds will be used for Administration Goods and Services.**

**Administration Goods and Services** $100.00

paper, copying, phone, misc supplies in support of project compliance and oversight

**4M. Description of how funds will be used for Administration Building Rental and Utilizations.**

**Administration Building Rental & Utilizations** $0.00

**4N. Description of how funds will be used for Administration Travel.**

**Administration Travel** $0.00

**4O. Description of how funds will be used for Administration Contracts.**

**Administration Contracts** $0.00

# Budget

**Organization:** North Seattle Community College

| Activity | Salary and Wages | Employee Benefits | Goods and Services | Building Rental & Utilizations | Travel | Contracts | Total |
|---|---|---|---|---|---|---|---|
| Project Development | $39,125.00 | $9,890.00 | $2,075.00 | $0.00 | $1,500.00 | $500.00 | $53,090.00 |
| Instruction | $6,000.00 | $960.00 | $0.00 | $0.00 | $0.00 | $0.00 | $6,960.00 |
| Administration | $4,200.00 | $1,596.00 | $100.00 | $0.00 | $0.00 | $0.00 | $5,896.00 |
| Total | $49,325.00 | $12,446.00 | $2,175.00 | $0.00 | $1,500.00 | $500.00 | $65,946.00 |